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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,874

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Ian David Kaehne

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DEFILLO & ASSOCIATES, INC.  
P.O. Box 14104  
Clearwater, FL 33766

EXAMINER

BADR, HAMID R

ART UNIT

PAPER NUMBER

1781

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DELIVERY MODE

11/22/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,874	<b>Applicant(s)</b> KAEHNE, IAN DAVID	
	<b>Examiner</b> HAMID R. BADR	<b>Art Unit</b> 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 36-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicants' amendment filed 9/13/2010 is acknowledged.

Claims 36-53 are being considered on the merits.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 36- 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 36 and 48 are indefinite for "enhancing the taste of a beer". The term "enhance" is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear over what standard this is to be "enhancing". Furthermore, since the flavor of beer is a complex sensation brought about by organic and inorganic components of beer, it is not clear what is really 'enhanced' regarding a complex flavor.

3. Claims 36 and 48 are also indefinite for "mineral additive enhances taste of the finished beer compared to the taste provided by a finished base beer diluted solely with water". It is not clear whether the taste of undiluted beer is compared to the taste of diluted beer or the taste of a diluted beer containing the minerals is being compared to

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the taste of a diluted beer not containing the minerals. Therefore, one of ordinary skill in the art would not be reasonably apprised of the scope of the claims.

4. Claims 36 and 48-49 are indefinite for "finished base beer". It is not clear whether the finished base beer is the beer before diluting with water or after diluting with water.

In other words it is not clear whether the minerals are added to the diluted beer or undiluted beer.

5. Claims 48-49 are indefinite for "before gassing with carbon dioxide" or "has been gassed with carbon dioxide". It is not clear whether the beer is carbonated or simply exposed to carbon dioxide. The phrase does not appear to be a common phrase in the art. If appropriate, it is suggested to use 'carbonation or carbonating or carbonated etc.'

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 36-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donhowe (US 2003/0157218; hereinafter R1) in view of Costa (WO 01/68534; hereinafter R2), Lindon et al. (US 5,786,006; hereinafter R3) and Alcazar et al. (2002, Multivariate characterization of beers according to their mineral content; hereinafter R4).

3. R1 discloses a process for the preparation of a sport beer or malt beverage that has enhanced nutrition in comparison to the existing beer or malt beverage. The

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beverage comprises a beer or malt beverage that contains supplements such as minerals, vitamins, anti-oxidants, proteins etc. (Abstract).

4. R1 discloses the process for the production of the sport beer as consisting of a brewing process wherein barley malt grain is milled, mixed with hot water, and carbohydrates are saccharified and fermented using yeast. After the fermentation by yeast, the yeast is separated and lagering or the maturation of the beer is carried out. The beer is transferred to a finishing tank where supplements such as calcium, zinc and/or iron are added. The supplements such as minerals or proteins or antioxidants are dissolved in water prior to the addition to the beer. [0017].

5. Given that the a base beer is produced first, as disclosed by R1, it is clear that the minerals are added to the base beer as presently claimed.

6. Given that the supplements are dissolved in water, it is clear that any dilution of the beer can be effectuated by those of skill in the art. The presently claimed dilution of 0.5% to 90% of the original strength of the beer is obvious. It is also clear that the higher the dilution rate, the lower the alcohol content of the diluted beer.

7. Additionally R1 claims a beverage having 0.45%-10% alcohol (R1 Claim 2). It is obvious that such a beer can represent the dilutions as presently claimed. It is therefore, clear that at higher alcohol content, e.g. the regular alcohol content of a specific beer type, minerals can be added to the beer without affecting the alcohol content.

8. Given that R1 discloses the process for making the original beer, it is obvious that any kind of beer such as stout beer, pilsner beer, light beer, extra light beer,

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medium strength beer etc. can be diluted and formulated with the minerals and other supplements.

9. The pH range of 3.5-5.0 is intrinsic to all beers. It is obvious that the pH of the diluted beer will be adjusted to preserving the taste of the beer and also for the preservation of the beer. The variability of pH in different beer types is also known to the people of skill in the art. The low pH of the product will also help the solubility of minerals in the diluted beer.

10. While R1 clearly is motivating for the supplementation of beer or malt beverages with minerals, it is silent regarding the groups of minerals as presently claimed.

11. R2 discloses additives for drinks and potable water. (Title and Abstract)

12. R2 discloses that the additive which could be solids, liquids etc can be dissolved into drinks including beers and wines (page 2, Definition).

13. R2 discloses the mineral additives to include calcium 0-300 mg, Chlorine 0-60 mg, fluor 0-4 mg, chromium 0-50 microgram, iron 0-40 mg, phosphorus 0-300 mg, iodine 0-300 microgram, magnesium 0-200 mg, manganese 0-5 mg, potassium 0-80 mg, selenium 0-50 microgram, sodium 0-150 mg, zinc 0-30 mg, copper 0-4 mg, gold 0-20 microgram, silver 0-20 microgram, tin 0-20 microgram, molybdenum 0-50 microgram, nickel 0-10 microgram, silicon 0-20 microgram, vanadium 0-20 microgram. (pages 13-15). The amounts are based on the daily human consumption. Therefore, a serving size can be designed to supply for instance 150 mg of calcium for a daily consumption. Further, such minerals are added to the beverage so that they do not adversely affect the taste of the beverage.

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14. It is also noted that heavy metals are also found in natural waters in part per billion (ppb) concentrations. The concentration of such elements in municipal and industrial waters can be found in water analysis reports. However, since the dilution of a beverage such as beer is usually done using highly purified water, the level of the heavy metals can be adjusted, in the purified water, by adding back low concentrations of heavy metals.

15. Given the spectrum of minerals, which can be added to beer, as disclosed by R2 and considering the fact that dilution of beer with water, to make low alcohol beer, will decrease the concentration of minerals in the diluted beer, and consequently the diluted beer will have a diluted taste, partly due to the lower mineral content of the diluted beer, the addition of mineral additives to a diluted beer would have been obvious to one of ordinary skill in the art. On the other hand, the determination of the concentration of minerals in an undiluted beer using conventional analytical techniques is routine in the art. Therefore, determining how much of each element is present in an undiluted beer would have been obvious as well. The problem to be solved is then adding the mineral type, relative to a specific type of beer, to the diluted beer to bring up the concentration of that element to the undiluted level. This way the partial impact of minerals on the beer taste would be compensated for. The mineral profile of certain beer types are known in the art, therefore, adding the minerals whose concentrations are decreased, due to diluting the beer, is obvious.

16. Since the common forms of these minerals are the dry forms, it is obvious to use the dry form as presently claimed. It is also obvious that calcium and magnesium

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compounds should be brought into solution if compounds are not water soluble as presently claimed. It is obvious that carbonated beverages are produced using carbon dioxide as presently claimed. The form of mineral supplements which can be used in human nutrition are also known in the art, therefore, selection of a specific mineral to be added to beer would be obvious to an artisan.

17. The solubility of the minerals in water and in the presence of other chemicals necessitates the inclusion of acids and buffers as presently claimed. It would be obvious to those of skill in the art to include acids either organic or inorganic as well as buffers to sustain the solubility of the added minerals in the beer or beverage. It would also be obvious to use acids such as phosphoric acid both for dissolution of minerals and for the organoleptic properties of this acid. Use of phosphoric acid in regular carbonated beverages is known in the art. Further, inclusion of buffering salts such as potassium phosphate and potassium hydrogen phosphate in low alcohol beers is known in the art. For instance US 4788066, also cited in the instant specification, discloses that adding potassium phosphate and potassium hydrogen phosphate to the mash water enhances the flavor of the beer.

18. R1 and R2 are silent regarding the incorporation of lithium into the beverage.

19. R3 discloses incorporating lithium at 0.06-0.15 mg/L of mineral water (Abstract).

20. R1, R2, and R3 are silent regarding the mineral content and quality characteristics of beers regarding their mineral content.



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21. R4 investigates the characterization of beer samples according to their mineral content. R4 discloses the determination of Zn, P, B, Mn, Fe, Mg, Al, Sr, Ca, Ba, Na and K in 32 beer samples. (Abstract)

22. R4 discloses that low alcohol beers are growing fast which is due to the attainment of better tasting products. Cereals, water, hops and yeast as well as industrial processing and containers may be the source of minerals present in beer. (page 45, Introduction )

23. R4 concludes that the chemometric approach in determining the mineral content provides a suitable method to differentiate beer samples. (page 52, conclusion) Given that mineral content of beers are different and even within a specific type of beer certain elements are more abundant than others, it is obvious that dilution of the beer will affect the normal levels of the mineral constituents and the taste effect of certain elements will be even affected more than others with special reference to elements of lower concentration. Therefore, adding minerals (depending on the type of beer) will change the taste, body and mouthfeel of the diluted beer.

24. Therefore, the role of minerals in characterization of beers was known at the time the invention was made. Further, R1 clearly gives the motivation for adding supplements including minerals to the beer with reduced alcohol (diluted beer). R2 also gives the details of the type and concentration of minerals which can be added to drinks including beer and wine. Since diluting any beer ( for the sake of lowering alcohol content) will cause a decrease in the concentration of constituting minerals in a specific volume of the product, it would be obvious to those of skill in the art to add the

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minerals as taught by R1 and R2 and R3 at least to a level which is ordinarily found in undiluted beers. One would do so to compensate for at least the effect of diluting a drink such as beer on the taste and mouthfeel. Absent any evidence to contrary and based on the combined teachings of the cited references, there would be a reasonable expectation of success in creating a diluted beer containing minerals.

### ***Response to Arguments***

Applicants' arguments have been thoroughly reviewed. These arguments are not persuasive for the following reasons.

1. Applicants argue that Donhowe (R1) fails to teach a method for enhancing the taste of beer by preparing a mineral additive by combining groups of minerals and that the mineral additive enhances the taste of the finished base beer compared to the taste provided by a finished base beer diluted solely with water.

a. As mentioned in the rejections under 112 second paragraph, the applicants are not clear in comparing the flavors of diluted and undiluted beer. If the applicants mean the flavor of a regular beer is different from the same beer when diluted with water, they are not disclosing anything new. It is obvious that the flavor of a regular beer is different from the flavor of the same beer when diluted with water.

On the other hand, there are no examples in the specification to disclose that regular beer is being supplemented with minerals without dilution. All examples are directed to a diluting water containing minerals. However, the Examiner is assuming that the flavor of diluted beer, diluted solely with water, is being compared to the flavor of diluted beer

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which has been diluted with water containing minerals. Since the flavor of undiluted beer is partly due to the mineral content, and dilution with water decrease the volumetric concentration of minerals in the diluted beer, adding mineral additives to the diluted beer will compensate for the lost flavor due to mineral dilution.

2. Applicants argue that what is not known in the art is that minerals enhance the taste of beer.

a. Alcazar (R4) clearly discloses that mineral content in various beers affect the flavor and characteristics of such beer. Furthermore, the flavor of a specific beer is not determined only by the mineral content. The beer flavor is a complex sensation caused by organic and inorganic compounds. However, the part played by minerals can obviously be affected by adding minerals.

3. Applicants argue that Costa provides for a very open ended range of minerals in amounts relative to health benefits but not in line with taste.

a. It can be said that the present claims are also open ended range of minerals. However, since minerals partly affect the flavor of beers (see R4), adding the minerals to beer or wine as disclosed by Costa, will affect the taste even if Costa does not mention taste of such products.

4. Applicants argue that Costa gives ranges starting at 0. Thus one is left uncertain as to compounds are actually required.

a. Costa discloses the type and the range of minerals which can be added to water, beer or wine. While some of the present claims ranges also start at 0, the optimum

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specific concentration of such minerals are determined for best flavor effect. The determination of such specific concentrations is well within the skill of the art.

Furthermore, the rejections are obviousness type rejections relying on multiple references, therefore, one cannot judge the teachings of only Costa or Donhowe and conclude that for instance Costa does not teach certain aspects of the invention.

5. Applicants argue that they have discovered that the specific mixture of minerals and the specific proportions would always provide the capacity to enhance the taste of a base beer.

a. As mentioned above, the specification does not support the idea of enhancing the flavor of undiluted beer. Therefore, the examiner is assuming that the applicants are discussing the flavor of a diluted beer. This flavor change due to the incorporation of minerals is of course obvious in light of the teachings of the references cited.

6. Applicants argue that in the absence of teaching by Donhowe and/or Costa; the mineral additive according to the present invention would always provide the capacity to dilute beer by compensating somewhat for the reduction and disruption of flavor and taste characteristics (profile) commensurate with the dilution.

a. It is clear that the dilution of a regular beer with water would always decrease the volumetric concentration of minerals in the beer. In other words, when regular beer is diluted with water, the taste associated with the specific concentration of minerals is also diluted. Therefore, adding back minerals to make up for the dilution effect would compensate for the reduction and disruption of taste and flavor.

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7. Applicants argue that Lindon refers to mineralized water formulations that has utility in preventing cardiovascular disease. While addition of lithium is disclosed, the reference fails to teach the use of lithium in a beer base.

a. Lindon is a teaching reference; it does not have to disclose the concepts disclosed by other references. Lindon teaches of the possibility of adding lithium to a beverage. Since the primary reference discloses the addition of minerals to the beer, it is obvious that lithium can be added as well. Furthermore, lithium is present in fresh waters in concentrations below 0.2 mg/L. Since the water normally used for diluting beer is purified water, one can always add the depleted element by adding it back.

8. Applicants argue that Alcazar (R4) clearly shows that the minerals present in beer come from the cereal, hops and yeast used. The reference is silent regarding adding additional minerals to the beer.

a. Addition of minerals to the beer is disclosed by R1 and R2. Alcazar is a teaching reference which discloses the role of minerals in flavor, taste and beer characteristics. Alcazar shows that the type and concentrations of certain minerals are characteristic of beer types. At this view, Alcazar is clearly teaching the concept with which the applicants are concerned. Alcazar is clearly disclosing the role the minerals play in the taste and flavor of beer types.

9. Applicants argue that the stage at which minerals are added during the brewing process is absolutely critical if the concentration or amount of mineral is important.

a. Donhowe teaches of adding the minerals to the base beer. The instant claims are also directed to the addition of minerals to the finished beer.

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10. Applicants argue that adding minerals to the finished beer means that the minerals are available in the form they are added with no possibility of removal together with for example spent barley or yeast and in accordance with the present invention, impact directly on the taste.

a. Please see Donhowe for the stage at which minerals are added to the base beer. Donhowe adds the minerals to the beer after filtration when spent barley and yeast have been removed therefore there is no chance for the added minerals to be removed with those unwanted components. It is clear that the added minerals are available in the form they are added and as such they directly impact the flavor of the beer.

11. Applicants disagree with the Examiner's assertion that "the addition of potassium phosphate and potassium hydrogen phosphate to a diluted beer is specifically known to enhance the flavor of the beer" in the context of the present claims.

a. The addition of these salts to the beer was known in the art at the time the invention was made. Please see US 4788066 which discloses that the addition of these salts to mash water enhances the flavor of beer. Furthermore, these salts were known in the art as buffering salts. It is noted that in order for the added minerals to stay in solution, there must be means of controlling the pH through using buffers. Therefore, one would logically use buffering salts, as presently claimed, to make the required adjustments. Their presence in the beer of course would affect the taste per the mentioned reference.

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12. Applicants argue that some minerals are not associated with an adverse impact on taste in other beverages, and that minerals in general are not regarded as flavor compounds.

a. The examiner strongly believes that minerals, when present at below their thresholds, do not normally impact the flavor especially when present individually. However, even at below threshold levels, when present as a group, they would definitely affect the flavor of the beverage to which are added are in which they are naturally present. Alcazar clear shows the effect of minerals on beer characteristics.

13. Applicants argue that they do not replace the flavor compounds that are lost, but in one aspect (e.g. in the production of low alcohol beer) addition of the mineral mix compensates for those losses in flavor compounds.

a. It is agreed that the flavor of beer is a complex sensation caused by organic and inorganic matter in the beer. It is also agreed that diluting beer with water affects the organic and inorganic matter as far as flavor is concerned. The applicants have not shown that the flavor of the diluted beer will be identical to the undiluted beer after adding minerals to the diluted beer. It is therefore clear that the added minerals will have an impact on the flavor of the diluted beer to certain extent, but cannot compensate totally for the effect of dilution on all flavor compounds in beer.

14. Applicants argue that the deficiency in taste in a diluted beer could be compensated for; solely by the addition of a mineral mix was not known, and that at the time of the present invention, flavor compounds in beer would be understood to be compounds other than minerals.

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a. Alcazar (R4) clearly shows that beer characteristics are determined by mineral content of the beer. Therefore the effect of minerals on flavor was known. The examiner does not agree with applicants that the effect of other flavor producing compounds can be compensated by addition of minerals. For instance the applicants have not shown that the effect of a compound such as acetaldehyde can be compensated for by adding minerals.

15. Applicants argue that there is no motivation to adjust the mineral levels to be driven purely by taste, and therefore the prior art does not provide any reason or motivation to optimize the levels of seven or more minerals for enhancement of flavor.

a. Costa gives full account of the type and concentration of minerals which can be added to beer and wine. The effect of certain concentrations of minerals on the flavor of beverages was known in the art. It is then very logical to adjust the levels, i.e. to optimize the concentrations, for the best possible effect on flavor, yet not to adversely affect the flavor of the product. The examiner does not agree with the fact that the applicants are the first people who discovered the effect of minerals on taste of a beverage. The knowledge of the effect of minerals on taste is as old as flavor science itself.

16. Applicants argue that the inventive step in the instant invention is that a mix of minerals in specific concentrations as set out in the claims can be used to enhance the flavor of beer.

a. The ranges of concentrations of certain minerals as presently claimed start at 0. Therefore, it can be said that those minerals are not required. Why they are being



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claimed is enigmatic. There are no specific ranges to show a specific effect. Even if such specific values were available, they would be the result of an optimization process. When a range of values is given, there are infinite number of concentrations in that range which can have similar effect. Therefore, there is no specificity as the applicants argue.

17. Applicants argue that it is not seen how the examiner gets to the point of view that “certain elements will be even affected more than others with special reference to elements of lower concentration” and that on their arithmetic, all levels will be diluted in exactly the same proportions as others.

a. It is agreed that all elements are diluted in exactly the same proportions.

However, for elements at lower concentrations, the effect of dilution, on flavor, will be even more pronounced as far as that specific low concentration element is concerned. In other words, those elements which are originally at threshold levels will fall below the threshold levels upon diluting with water and therefore, their effects on flavor are lost more than the elements which are still above the threshold level even after diluting with water.

18. Applicants argue that concentration of calcium in Donhowe is 1700 mg/l which is approximately 7 fold more calcium than the highest level defined in the present claims.

a. Donhowe is not used as a reference under 102(b). Therefore, it does not have to teach the exact concentration of calcium as presently claimed. Donhowe is being cited to teach the concept of adding minerals to beer which is diluted. To optimize the levels

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of minerals as taught by Donhowe in view of others, to get to acceptable levels regarding acceptable flavors would be obvious and within the skill of the art.

19. Applicants argue that calcium and magnesium impact adversely on taste in water which is an indication of the non-obviousness of the addition, to the finished beer, of a mineral mix when those two minerals are present in significant amounts.

a. Since the flavor of beer is not created only by minerals and there are numerous number of organic and inorganic materials determining the flavor of beer, a generalization on the adverse effect of calcium and magnesium on the taste of water can not be indicative of their similar effect on the flavor of beer. Alcazar clearly shows the presence of calcium and magnesium in various types of beer; contributing to their natural taste.

20. Applicants argue that the inventor has found that a balance of concentration of several minerals is required in which balance counteracts any adverse flavor input that might result from the addition of any one of the minerals on their own.

a. Alcazar clearly shows that a balanced combination of minerals determines the characteristics of beer. Therefore, it was known that a balanced combination of elements was required. Furthermore, the balanced combination of minerals would be logically obtained by optimizing the level of minerals so that the overall effect on beer taste is acceptable. The optimization process would be considering the type and concentration of minerals together with buffering capacity of the beer product, the solubility of such chemicals at ambient temperature, the pH of the final product and of course the overall effect of the mineral mix on the flavor of diluted beer.

***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,788,066 discloses the addition of potassium phosphate and potassium hydrogen phosphate to low alcohol beer to enhance flavor.

Matsushige, I; de Oliveira, E. 1993. Food Chem. 47:205. This reference reports on the levels of Co, Cr, Cu, Fe, Pb, and Zn in canned and bottled beers. The results showed the good quality of the beers with respect to their metal content.

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R. Badr  
Examiner  
Art Unit 1781

/Keith D. Hendricks/

Supervisory Patent Examiner, Art Unit 1781